

LISTING OF THE CLAIMS

Claims 1-19 (Cancelled).

Claim 20 (Previously Presented): A process for preparing 3-cyano-3,5,5-trimethylcyclohexanone (isophoronenitrile), comprising

reacting isophorone with hydrogen cyanide in the presence of a base as a catalyst to form a crude isophoronenitrile product, and

subsequently distilling the crude isophoronenitrile product to prepare the isophoronenitrile,

wherein the base is selected from the group consisting of an alkali metal cyanide, an alkaline earth metal cyanide, an alkali metal hydroxide, an alkaline earth metal hydroxide, an alkali metal oxide, an alkaline earth metal oxide, an alkali metal alcoholate and an alkaline earth metal alcoholate,

wherein, before the distilling, at least one sulfonic acid is added,

wherein the at least one sulfonic acid is selected from the group consisting of methanesulfonic acid, a naphthalenesulfonic acid, an alkyl-substituted naphthalenesulfonic acid, an alkyl-substituted benzenesulfonic acid having an alkyl radical having greater than or equal to 4 carbon atoms, and combinations thereof, and

wherein the addition of the at least one sulfonic acid neutralizes the base in such a way that no sedimenting precipitates occur.

Claim 21 (Previously Presented): The process of claim 20, wherein the at least one sulfonic acid is added in an amount of 1 acid equivalent, based on 1 base equivalent of the base used as the catalyst.

Claim 22 (Previously Presented): The process of claim 20, wherein the base used as the catalyst is used in an amount of from 0.01 to 20% by weight, based on the isophorone used.

Claim 23 (Previously Presented): The process of claim 20, wherein the reacting is carried out at temperatures of from 80 to 220°C.

Claim 24 (Previously Presented): The process of claim 20, wherein the reacting is carried out at a pressure of from 1 to 5 bar.

Claim 25 (Previously Presented): The process of claim 20, wherein the distilling is carried out in a rectification column.

Claim 26 (Previously Presented): The process of claim 20, wherein the reacting, the addition of the at least one sulfonic acid, and the subsequent distilling are carried out continuously.

Claim 27 (Cancelled).

Claim 28 (Previously Presented): A process for preparing 3-cyano-3,5,5-trimethylcyclohexane (isophoronenitrile), comprising

a) reacting isophorone with hydrogen cyanide in the presence of a base as a catalyst to obtain a reaction mixture comprising a crude isophoronenitrile product,

b) neutralizing the reaction mixture from a) with at least one sulfonic acid to obtain a neutralized reaction mixture, and

c) distilling the neutralized reaction mixture obtained in b),

wherein the base is selected from the group consisting of an alkali metal cyanide, an alkaline earth metal cyanide, an alkali metal hydroxide, an alkaline earth metal hydroxide, an alkali metal oxide, an alkaline earth metal oxide, an alkali metal alcoholate and an alkaline earth metal alcoholate;

wherein the at least one sulfonic acid is selected from the group consisting of methanesulfonic acid, a naphthalenesulfonic acid, an alkyl-substituted naphthalenesulfonic acid, an alkyl-substituted benzenesulfonic acid having an alkyl radical having greater than or equal to 4 carbon atoms, and combinations thereof; and

wherein the addition of the at least one sulfonic acid neutralizes the base in such a way that no sedimenting precipitates occur.

Claims 29-33 (Cancelled).

Claim 34 (Previously Presented): A method for avoiding precipitates in the neutralization of a base used as a catalyst in the reaction of isophorone with hydrogen cyanide in the presence of said base, the method comprising

adding at least one sulfonic as a neutralizing agent before a distillation of a crude isophoronitril product which has been obtained by said reaction,

wherein the base is selected from the group consisting of an alkali metal cyanide, an alkaline earth metal cyanide, an alkali metal hydroxide, an alkaline earth metal hydroxide, an

alkali metal oxide, an alkaline earth metal oxide, an alkali metal alcoholate and an alkaline earth metal alcoholate; and

wherein the at least one sulfonic acid is selected from the group consisting of methanesulfonic acid, a naphthalenesulfonic acid, an alkyl-substituted naphthalenesulfonic acid, an alkyl-substituted benzenesulfonic acid having an alkyl radical having greater than or equal to 4 carbon atoms, and combinations thereof; and

wherein the addition of the at least one sulfonic acid neutralizes the base in such a way that no sedimenting precipitates occur.

Claim 35 (Previously Presented): The process of claim 20, wherein the at least one sulfonic acid is diisobutylnaphthalenesulfonic acid or dodecylbenzenesulfonic acid.

Claim 36 (Previously Presented): The method of claim 28, wherein the at least one sulfonic acid is diisobutylnaphthalenesulfonic acid or dodecylbenzenesulfonic acid.

Claim 37 (Previously Presented): The process of claim 20, wherein the base is sodium cyanide and the at least one sulfonic acid selected from the group consisting of, methanesulfonic acid, diisobutylnaphthalenesulfonic acid, dodecylbenzenesulfonic acid and combinations thereof.

Claim 38 (Previously Presented): The method of claim 20, wherein the at least one sulfonic acid is selected from the group consisting of methanesulfonic acid, diisobutylnaphthalenesulfonic acid, dodecylbenzenesulfonic acid, and combinations thereof; and the base is sodium cyanide.

Claim 39 (Previously Presented): The process of claim 20, wherein the reacting is carried out at temperatures of from 120 to 200°C.

Claim 40 (Previously Presented): The process of claim 20, wherein the reacting is carried out at temperatures of from 150 to 200°C.

Claim 41 (Previously Presented): The process of claim 20, wherein the reaction is carried out at a pressure of from 1 to 3 bar.